PINAL AIRPARK MASTER PLAN

Prepared for the
County of Pinal

CHAPTER 9
ENVIRONMENTAL REVIEW

Chapter Nine

ENVIRONMENTAL REVIEW

INTRODUCTION

The purpose of this environmental review is to identify potential adverse environmental impacts which may be related to the recommended airport development at Pinal Airpark. In accordance with FAA guidelines, this environmental review considers twenty specific impact categories, ranging from noise to construction impacts. Each category has been addressed for the proposed development.

The checklist provided in **Table 9-1** is adapted from FAA **Order 5050.4A**, the **Airport Environmental Handbook** [FAA, 1985]. The table lists the categories where impacts are possible and where the subjects must be addressed in any project that involves any of the following:

1) Airport location
2) New runway
3) Major runway extension
4) Runway strengthening creating specific noise conditions within specified boundaries
5) Major change of entrance or access roads
6) Land acquisition
7) Establishment or relocation of an instrument landing system, or an approach lighting system
8) Development involving historic sites, Section 4(f) land, farmland, wetlands, coastal zones, floodplains, or endangered or threatened species

NOISE

INTRODUCTION

The impact of aircraft noise is potentially the most critical of all environmental effects associated with airport development and aircraft operations. Aircraft noise exposure is most likely to have a negative behavioral and subjective effect on people, rather than to cause physical injury. Behavioral effects involve interference with activities such as speech, learning, and sleeping. Subjective effects are described by terms like annoyance and nuisance. The magnitude of the problem depends on the volume, frequency, and time of day of aircraft operations, the types of aircraft, and the character of land use in the area exposed.

Noise is most often defined as unwanted sound. However, sound is measurable, whereas noise is subjective. The relationship between measurable sound and human irritation is the key to understanding aircraft noise impact. A rating scale has been devised to relate sound to the sensitivity of the human ear. The A-weighted decibel scale (dBA) is calibrated to

Table 9-1
CHECKLIST OF SOURCES OF POTENTIAL ENVIRONMENTAL IMPACTS

Sources of Potential Environmental Impact	Impact with Recommended Development
Noise	Investigate
Compatible Land Use	Investigate
Social Impacts	Investigate
Induced Socioeconomic Impacts	Investigate
Air Quality	Investigate
Water Quality	Investigate
Special Land Uses, DOT Act, Section 4(f)	No
Historic, Architectural, Archaeological, and Cultural Resources	Investigate
Biotic Communities	Investigate
Endangered and Threatened Species, Flora and Fauna	Investigate
Wetlands	No
Floodplains	Investigate
Shoreline Management	No
Coastal Barriers	No
Wild and Scenic Rivers	No
Farmland	No
Energy Supply and Natural Resources	Investigate
Light Emissions	Investigate
Solid Waste Impact	Investigate
Construction Impacts	Investigate

NOTES: Investigate = Possible impact might result; assessed in more detail in this Review.

No = No impact anticipated; source has been eliminated from further consideration in this review.

the faintest sound audible to the average young male ear. The human ear often judges an increase of 10 decibels as a doubling of sound. The level of loudness of several common sounds is compared to the dBA scale in **Figure 9.**

The challenge lies in determining what amount and what kind of sound constitutes noise. The vast majority of people exposed to aircraft noise are not in danger of direct physical harm. However, much research on the effects of noise has lead to several generally accepted conclusions:

- The effects of sound are cumulative; therefore, the duration of exposure must be included in any evaluation of noise.
- Noise can interfere with outdoor activities and other communication.
- Noise can disturb sleep, TV/radio reception, and relaxation.
- When community noise levels have reached sufficient intensity, community action can occur.

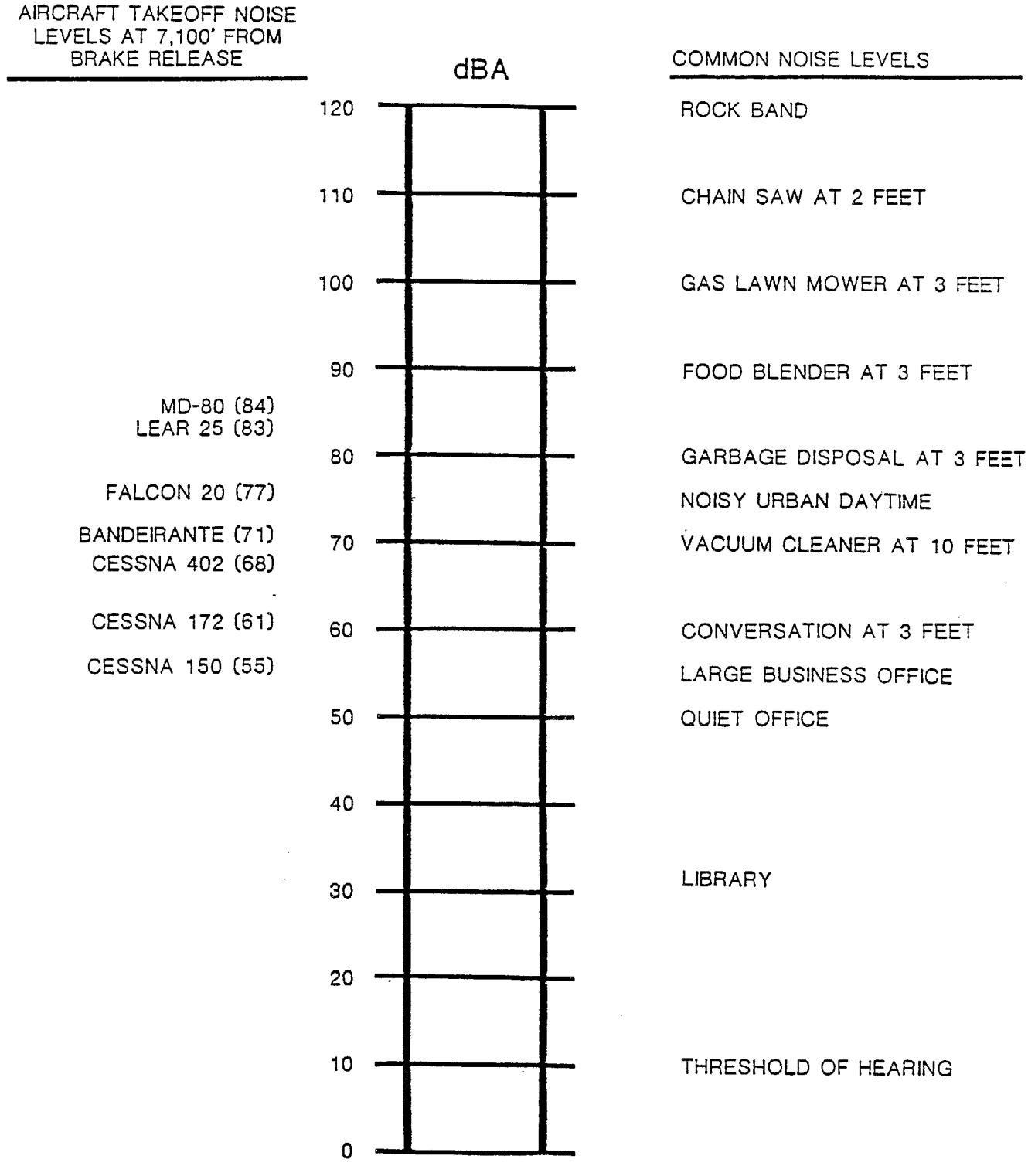
Research has also found that individual responses to noise are difficult to predict. Some people are annoyed by perceptible noise events while others show little concern over the most disruptive events. However, it is possible to predict the responses of groups of people. Consequently, community response, not individual response, has emerged as the prime index of aircraft noise measurement.

LDN METHODOLOGY

On the basis of the findings described above, a methodology has been devised to relate measurable sound from a variety of sources to community response. It has been termed "Day-Night Average Sound Level" (Ldn) and has been adopted by the U.S. Environmental Protection Agency, Department of Housing and Urban Development, and the Federal Aviation Administration for use in evaluating noise impacts.

The basic unit in the computation of Ldn is the sound exposure level (SEL). An SEL is computed by adding the dBA level for each second of noise event above a certain threshold. For example, a noise level of 45 dBA receives the sound impulses of an approaching aircraft and records the dBA reading for each second of the event as the aircraft approaches and departs. Each of these 1-second readings are then added logarithmically to compute the SEL. Because of the logarithmic calculation, noise levels below 10 dBA of the maximum level are insignificant in terms of Ldn value.

The computation of an airport Ldn, as illustrated in **Figure 10,** involves the addition, weighing, and averaging of each SEL to achieve an Ldn level at a particular location. The SEL of each noise event occurring between the hours of 10:00 p.m. and 7:00 a.m. is auto-



TYPICAL NOISE LEVELS ON dBA SCALE

AIRPORT MASTER PLAN
PINAL AIRPARK

FIGURE 9

AIRPORT Ldn NOISE CONTOUR
AIRPORT MASTER PLAN
PINAL AIRPARK

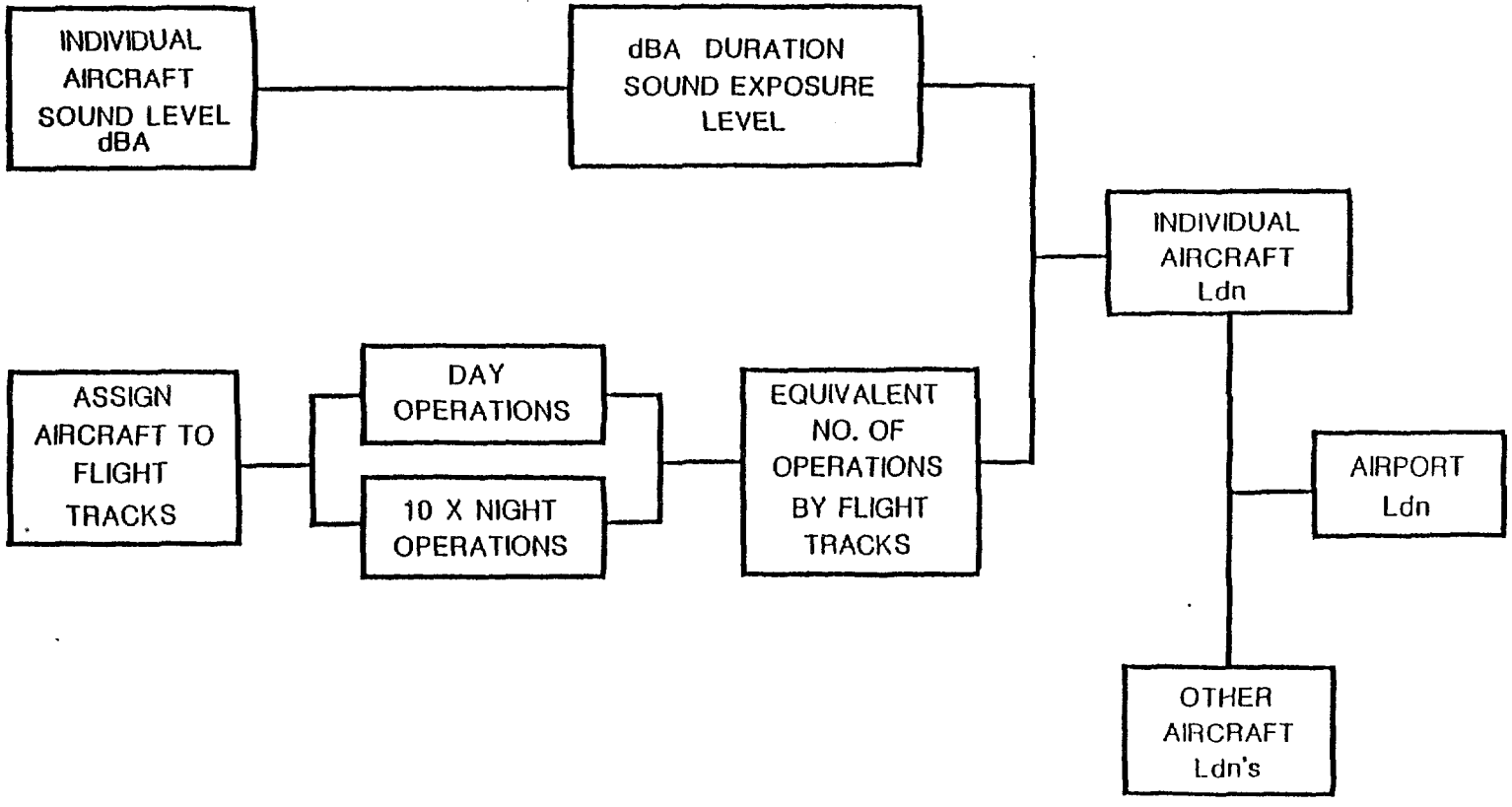


FIGURE 10

matically weighted by adding 10 dBA to the SEL to account for the assumed additional irritation perceived during that period. All SELs are then averaged over a given time period (day, week, year) to achieve a level characteristic of the total noise environment.

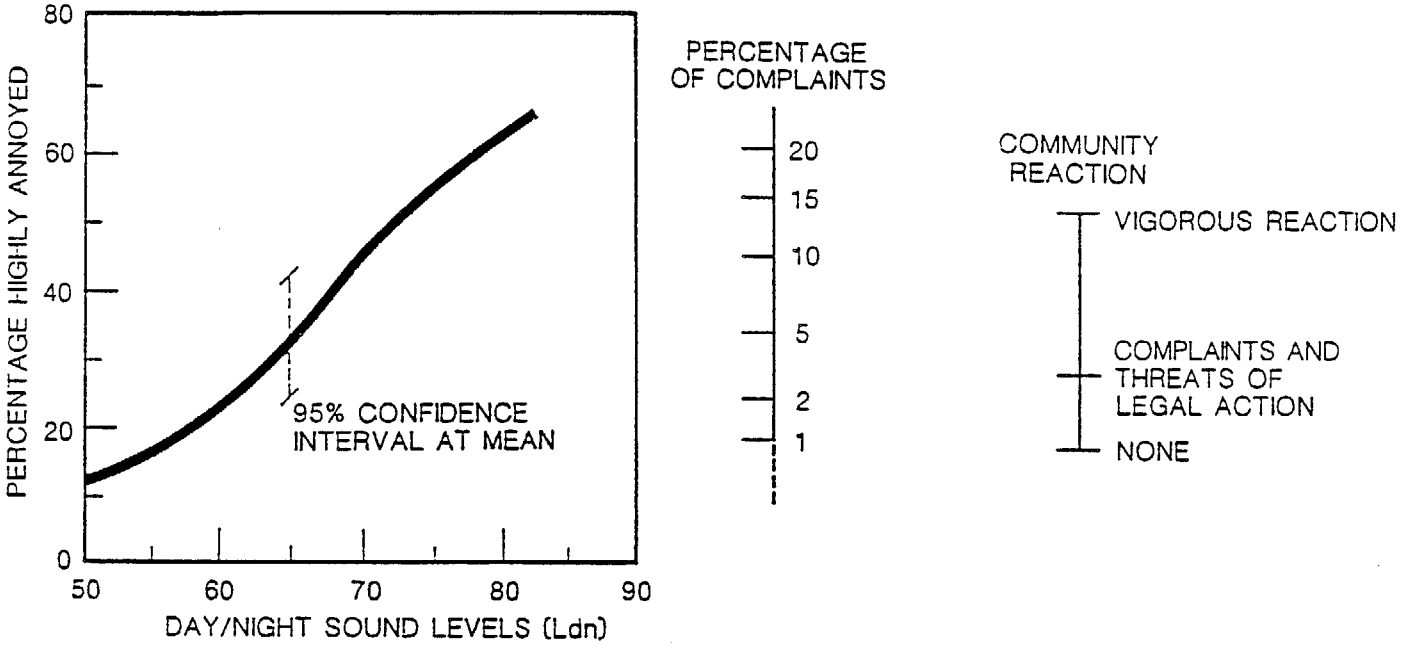
More simply stated, an Ldn level is approximately equal to the average dBA level during an entire time period with a weighting for evening and nighttime noise events. For example, a 65 Ldn level could describe an area having a time-averaged constant noise level of 65 dBA during the daytime, 62 dBA during the evening, and 55 dBA during the nighttime, even though the area would experience noise events higher and lower than 65 dBA. The main advantage of Ldn is that it provides a common measure for a variety of different noise environments. The same Ldn level can describe an area with very few high noise events as well as an area with many low level events.

NOISE AND LAND-USE COMPATIBILITY CRITERIA

Survey research relating Ldn levels to community reaction is shown in **Figure 11** and summarized here. Generally, at a 65 Ldn level, 33% of people exposed will be highly annoyed and 5% will actually complain. As the noise exposure drops to 60 Ldn, 24% of the population are projected to be highly annoyed and 2% complaining. On the basis of such community reaction research, several government agencies have devised standards for acceptable land use within areas impacted by aircraft noise.

Federal regulatory agencies of government have adopted standards and suggested guidelines relating Ldn to compatible land uses. Most of the noise and land-use compatibility guidelines strongly support the concept that significant annoyance from aircraft noise levels does not occur outside a 65 Ldn contour. However, this does not mean there will not be noise complaints from residents living outside the 65 Ldn noise contour. Federal agencies supporting this concept include the Environmental Protection Agency, Department of Housing and Urban Development, and the Federal Aviation Administration.

Federal Aviation Regulation (FAR) Part 150, Airport Noise Compatibility Planning, provides guidance for land-use compatibility around airports. **Table 9-2** presents these guidelines. Compatibility or noncompatibility of land use is determined by comparing the noise contours with existing and potential land uses. Generally, residential uses are not compatible within the 70 Ldn and most other uses require some degree of noise level reduction from outdoor to indoor environments. Residential uses are similarly considered incompatible, for the most part, within the 65-70 Ldn. Most other uses are compatible within 65-70 Ldn contours. All types of land uses are compatible in areas below 65 Ldn.



SOURCE:

"IMPACT OF NOISE ON PEOPLE", FAA OFFICE OF ENVIRONMENTAL QUALITY, MAY 1977.

COMMUNITY REACTION TO NOISE
AIRPORT MASTER PLAN
PINAL AIRPARK

FIGURE 11

Table 9-2
LAND-USE COMPATIBILITY
WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS

Land Use	Yearly Day-Night Average Sound Level (Ldn) In Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes & transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile Home Parks	Y	N	N	N	N	N
Transient Lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and Nursing Homes	Y	25	30	N	N	N
Churches, Auditoriums, and Concert Halls	Y	25	30	N	N	N
Governmental Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, Business and Professional	Y	Y	25	30	N	N
Wholesale and Retail--Building Materials, Hardware and Farm Equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail Trade--General	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing General	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and Optical	Y	Y	25	30	N	N
Agriculture (except livestock) and Forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock Farming and Breeding	Y	Y(6)	Y(7)	N	N	N
Mining and Fishing, Resource Production and Extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor Sports Arenas, Spectator Sports	Y	Y(5)	Y(5)	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits and Zoos	Y	Y	N	N	N	N
Amusements, Parks, Resorts and Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables and Water Recreation	Y	Y	25	30	N	N

Table 9-2 (Continued)

Y (Yes) Land-use and related structures compatible without restrictions.

N (No) Land-use and related structures are not compatible and should be prohibited.

NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into design and construction of the structure.

25, 30 or 35 Land uses and structures generally compatible; measures to achieve NLR or 25, 30, or 35 dB must be incorporated into design and construction of the structure.

NOTES:

1. Where the community determines that residential uses must be allowed, measures to achieve outdoor to indoor Noise Levels Reduction (NLR) of at least 25dB and 30dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.

2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received office areas, noise sensitive areas, or where the normal noise level is low.

5. Land-use compatible, provided special sound reinforcement systems are installed.

6. Residential buildings require an NLR of 25.

7. Residential buildings require an NLR of 30.

8. Residential buildings not permitted.

SOURCE: Federal Aviation Regulations, Part 150, Airport Noise Compatibility Planning, dated January 18, 1985.

1991 NOISE CONTOURS

The data used to develop the following noise contours was obtained through interviews with personnel at Pinal Airpark who represent the Department of Defense, the Army, and Evergreen Air Center. As noted in the Forecast chapter, a sharp decline in aircraft activity occurred between 1990 and 1991. As a result, the Consultant determined that the use of 1991 activity estimates would provide a more realistic indication of current noise levels. Numbers of operations were estimated to the best of their ability, considering the lack of a control tower and recorded data. Ldn contours were developed based upon this information and the forecasts outlined in this Master Plan.

The 1991 contours shown in **Figure 12** are based on existing runway and helipad conditions. Certain assumptions were made in formatting the model runs. The operations do not include B&F Enterprises, since that FBO has already moved to Avra Valley. This significantly reduces the number of jumping operations; however, the Department of Defense still maintains jumping operations on the Airpark.

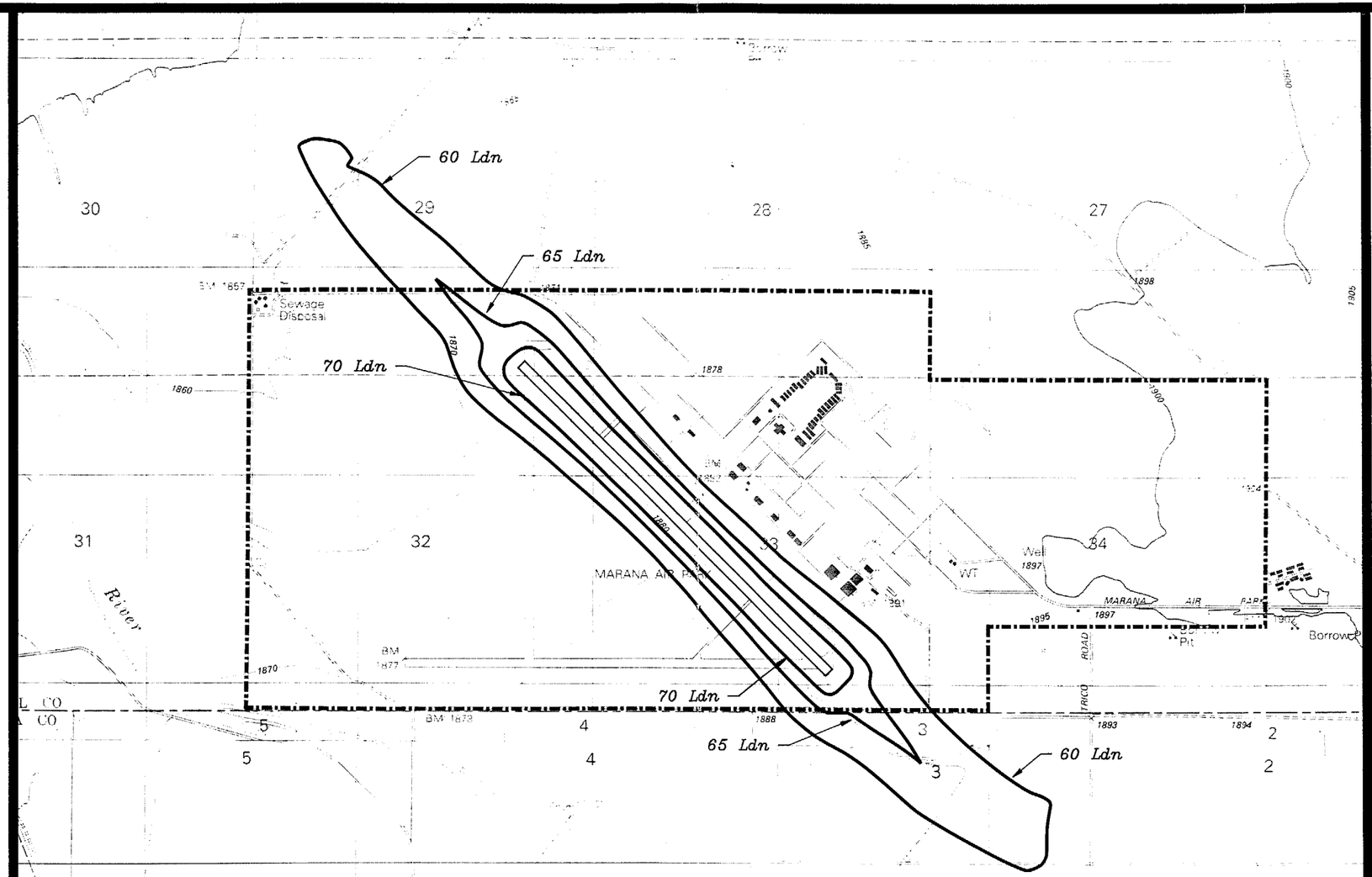
As depicted in **Figure 12**, the 70 Ldn contour for existing conditions is contained within Airpark boundaries. The 65 Ldn falls outside Airpark boundaries at either end. This contour extends for 2,500 feet to the south beyond the property line and 400 feet to the north of the property. The 60 Ldn contour extends 6,000 feet north of the boundary and 7,800 feet to the south. The 70 Ldn contour contains 0.1 square miles of land (64 acres), the 65 Ldn contour contains 0.2 square miles of land (128 acres), and the 60 Ldn contour contains 0.7 square miles of land (448 acres).

2000 NOISE CONTOURS (EXISTING RUNWAY CONFIGURATION)

The forecasted year 2000 contours are shown in **Figure 13**. The Army ARNG training site activities changed the contours significantly. After 1992, the training for the ARNG will be moved to another location, eliminating touch-and-go traffic due to helicopters for future years. In the year 2000, the contours shrink rather than grow for this same reason. The 70 and 65 Ldn contours are contained entirely on Airpark property. The 60 Ldn contour extends 4,700 feet to the north and 6,200 feet to the south. The 70 Ldn contour contains 64 acres of land, the 65 Ldn contour contains 128 acres of land, and the 60 Ldn contour contains 256 acres of land.

2010 NOISE CONTOURS (10,000-FOOT RUNWAY CONFIGURATION)

In this forecasted year, the primary difference from the earlier analyses is the extension of Runway 12-30 to 10,000 feet. The flight tracks remained the same shape as the previous forecast years, but were lengthened according to the extended length of the runway. In addition, operations increased over the year 2000 to 62,200 total annual operations. The contours are shown in **Figure 14**. The 70 Ldn contour contains 128 acres of land, the 65 Ldn contour contains 192 acres of land, and the 60 Ldn contour contains 384 acres of land.



LAND USE COMPATIBILITY MATRIX

LAND USE CATEGORIES	COMMUNITY NOISE EQUIVALENT LEVEL (Ldn) 60	65	70
MOBILE HOMES	B	C	D
SINGLE-FAMILY, TOWNHOUSE, APARTMENT	B	C	C
HOTELS, MOTELS	A	B	C
SCHOOLS, CHURCHES, LIBRARIES	C	C	C
AUDITORIUMS, CONCERT HALLS	C	C	D
PARKS, PLAYGROUNDS	B	C	C
OFFICES	B	B	B
RETAIL COMMERCIAL, THEATRES, RESTAURANTS	B	B	B
WHOLESALE COMMERCIAL, LIGHT INDUSTRIAL	A	B	B
FARMING/GROVES	A	A	A

INTERPRETATION

ZONE A CLEARLY ACCEPTABLE — The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference from aircraft noise. (Residential areas: both indoor and outdoor noise environments are pleasant.)

ZONE B NORMALLY ACCEPTABLE — The noise exposure is great enough to be of some concern, but common building constructions will make the indoor environment acceptable, even for sleeping quarters. (Residential areas: the outdoor environment will be reasonably pleasant for recreation and play.)

ZONE C NORMALLY UNACCEPTABLE — The noise exposure is significantly more severe, so that unusual and costly building constructions are necessary to ensure adequate performance of activities. (Residential areas: barriers must be erected between the site and prominent noise sources to make the outdoor environment tolerable.)

ZONE D CLEARLY UNACCEPTABLE — The noise exposure at the site is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive. (Residential areas: the outdoor environment would be intolerable for normal residential use.)

LEGEND

NOISE CONTOUR LINE

AIRPORT PROPERTY BOUNDARY

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N

MAG. DEC. 12° 13' E (1985)

0 500 1000 2000

SCALE IN FEET

FEDERAL AVIATION ADMINISTRATION	CITY OF MARANA, ARIZONA	PINAL AIRPARK MARANA, ARIZONA
APPROVAL DATE: _____ SEE APPROVAL LETTER: _____ SIGNATURE	APPROVAL DATE: _____ SEE APPROVAL LETTER: _____ SIGNATURE	1991 NOISE CONTOUR

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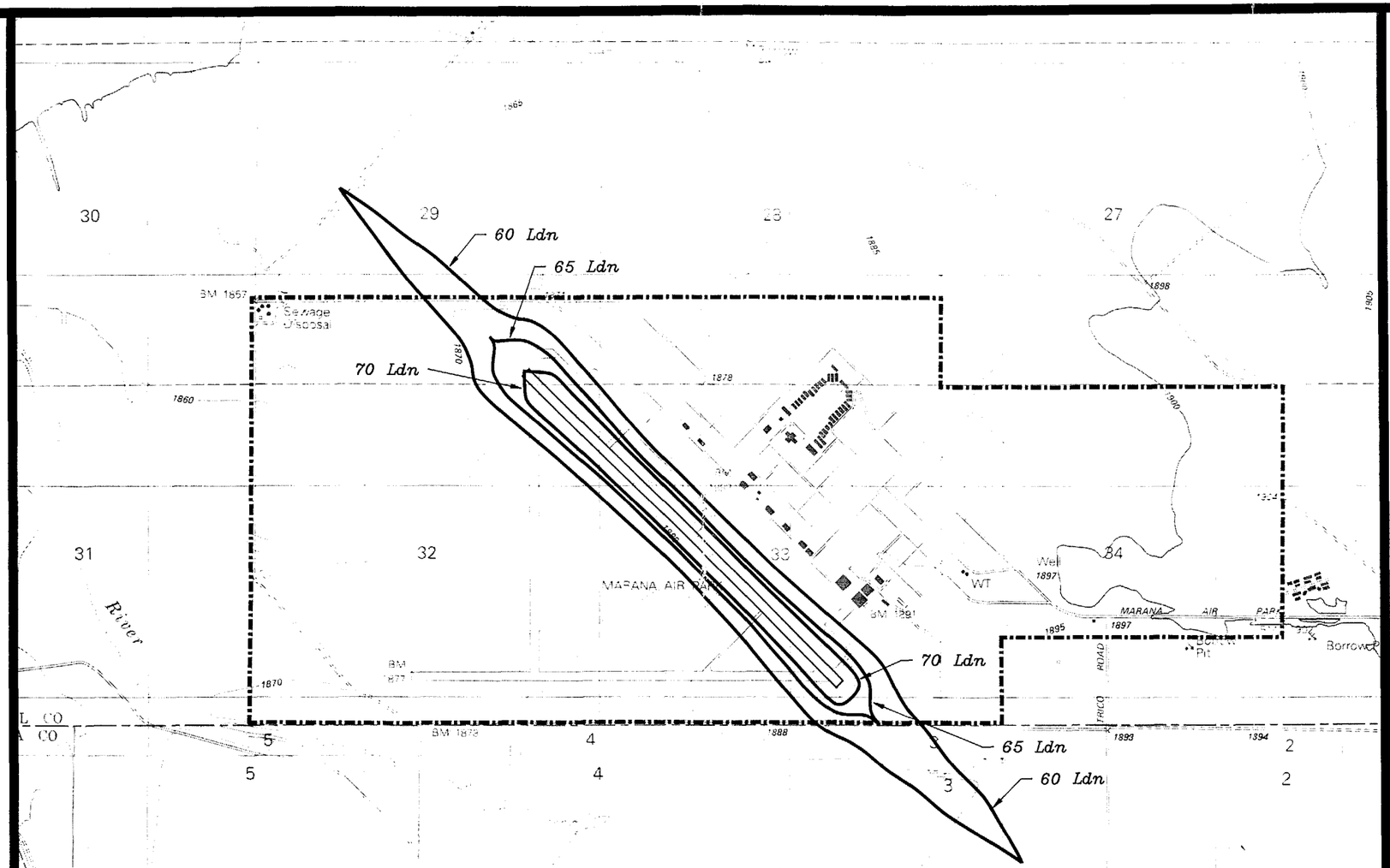
2151 Michelson
Suite 252
Irvine, California 92715
(714) 476-2826

FIGURE 12

DATE: OCTOBER 1, 1991

DRAWN BY: RON JOHANNESSEN



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SCALE IN FEET

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PINAL AIRPARK
MARANA, ARIZONA

2000 NOISE CONTOUR

FIGURE 13

DATE: OCTOBER 1, 1991

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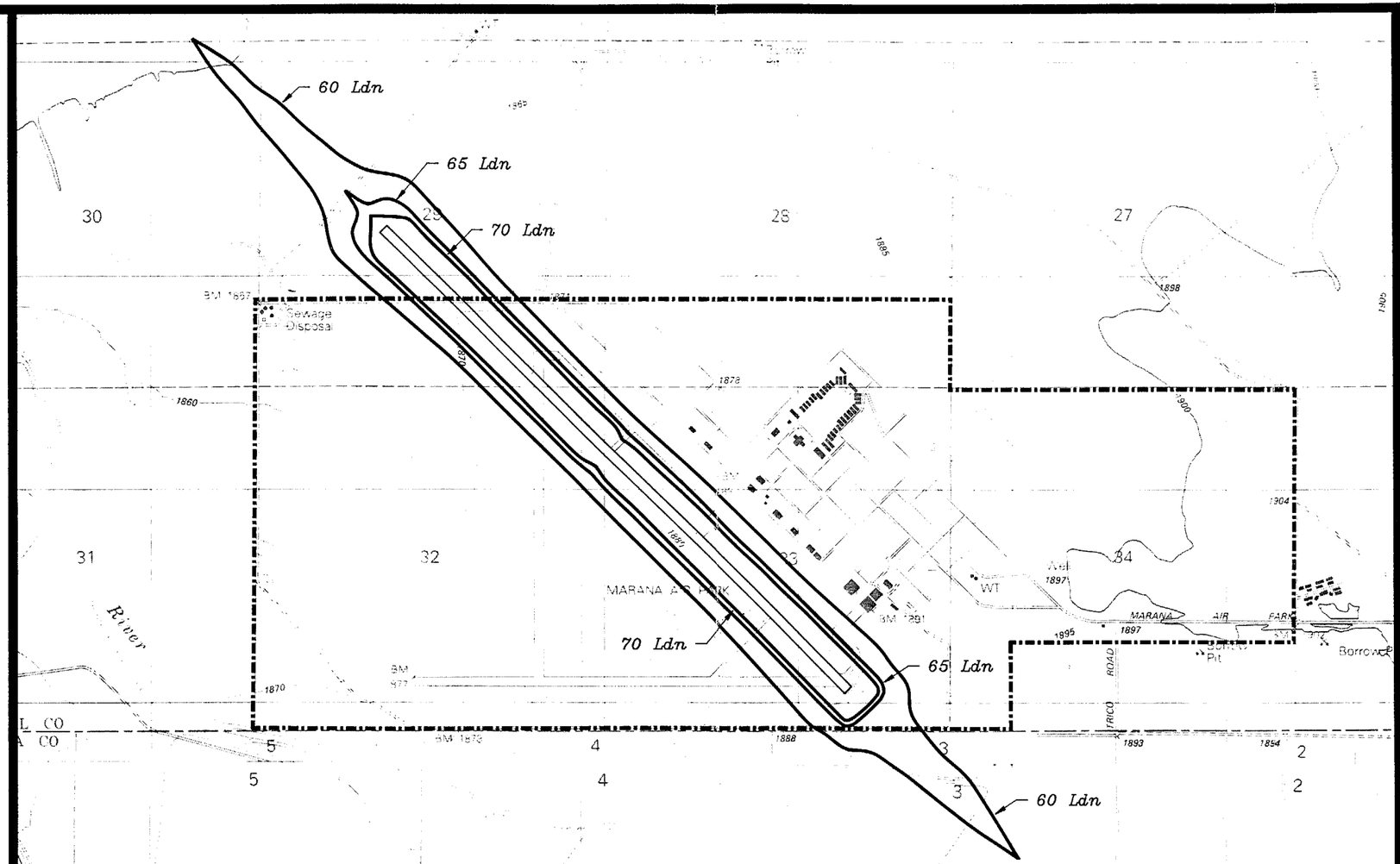

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WHOLESALE COMMERCIAL, LIGHT INDUSTRIAL	A	B	B
FARMING/GROVES	A	A	A

INTERPRETATION

ZONE A CLEARLY ACCEPTABLE — The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference from aircraft noise. (Residential areas: both indoor and outdoor noise environments are pleasant.)

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LEGEND

NOISE CONTOUR LINE

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Suite 252
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FIGURE 14

DATE: OCTOBER 1, 1991

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COMPATIBLE LAND USE

The compatibility of existing and planned land uses in the vicinity of an airport is generally associated with the level of noise impact related to the airport. Compatibility or non-compatibility of land use is determined by comparing the Ldn noise contour with existing and potential land uses. The FAA has developed guidelines for land-use compatibility based on noise levels and the nature of the land use being impacted, as summarized under the Noise discussion and shown in **Table 9-2**. Commercial, industrial, and most public uses are considered compatible with airport operations, as long as they are consistent with performance standards of **Federal Aviation Regulation (FAR) Part 77** relative to height and safety. Residential use is compatible in areas outside the 65 Ldn noise contour.

The land use in the vicinity of Pinal Airpark is shown in **Figure 15**. The land to the south of the field is zoned as RH-1 (one Dwelling per 180,000 feet or 4.13 acres) by Pima County. The land to the west, north, and east of the Airpark is categorized as State-owned land by Pinal County's records. At the southeast corner adjacent to the property the land is Patent land, according to Pinal County's records. U.S. Interstate 10 runs north-south 1.5 miles east of the property, connecting the Airpark with Phoenix and Tucson.

The 10,000-foot runway alternative will require the purchase and acquisition of approximately 100 acres of State-owned land to the north of the property in Section 29. This must follow the "Uniform Relocation Assistance and Real Property Acquisition Act" and **Land Acquisition and Relocation Assistance Under the Airport Development Aid Program** [FAA, 1975].

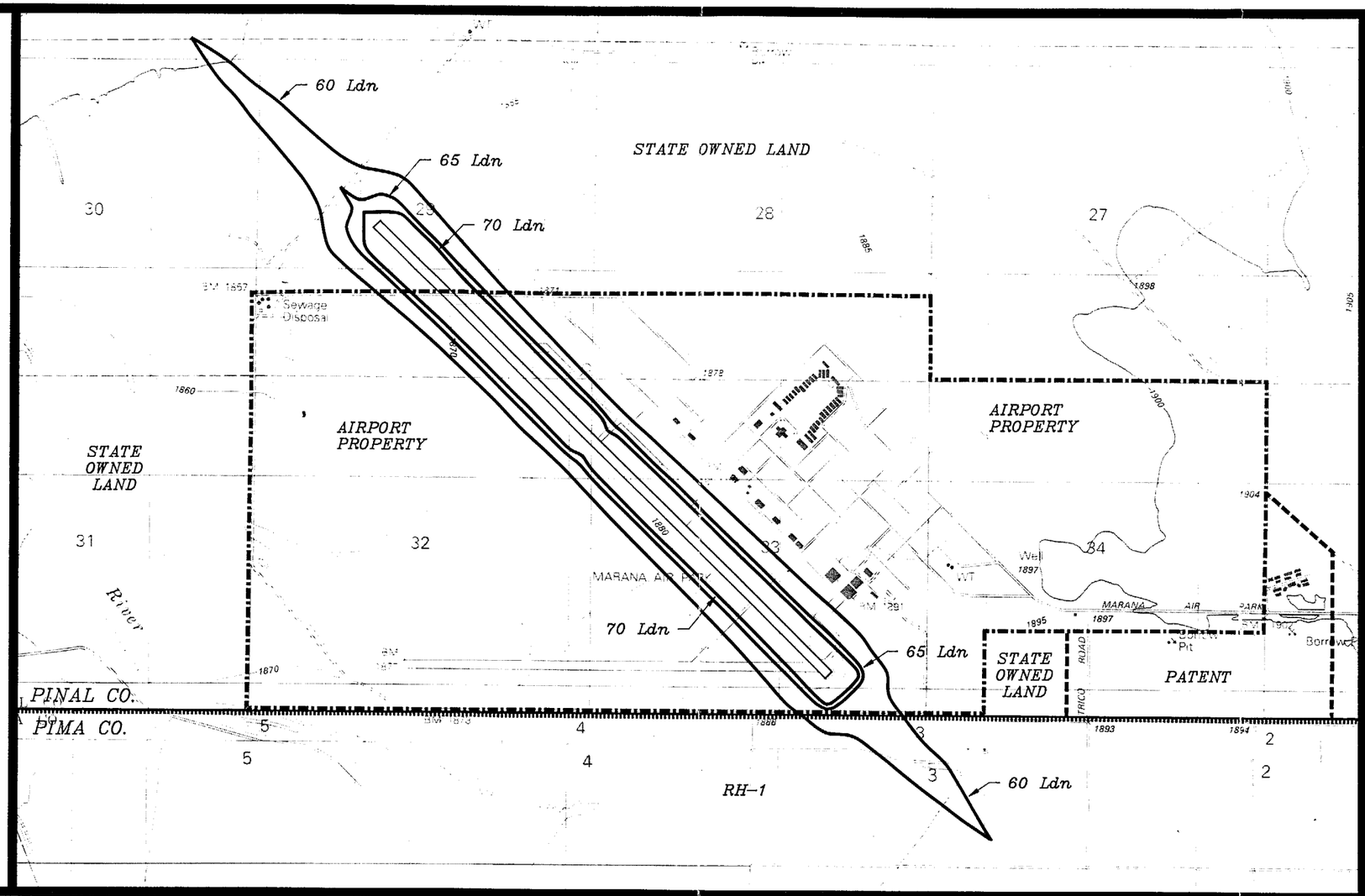
SOCIAL IMPACTS

The proposed development will not require relocation of residences or businesses, and surface transportation routes will not be altered outside the airport grounds. It will require the relocation of the ANG helipads. No adverse social impacts or community disruptions are anticipated. The overall effects of the proposed development at the Airpark will be the addition of a safer, more efficient air transportation service to the residents of the county.

SOCIOECONOMIC IMPACTS

This category refers to impacts such as shifts in business and economic activity, demands on public services, or patterns of population growth. Future Airpark development will create impacts due to demands on public service and creation of employment.

Evergreen Air Center is a major employer and primary lease holder of airport property. They are an airport-related business providing storage and maintenance service for airlines, individuals, and businesses internationally. They currently employ 530 people. Positive



DESIGNATIONS

PIMA COUNTY

RH-1 – SINGLE FAMILY RESIDENCE (180,000 sq. ft.)

LAND USE COMPATIBILITY MATRIX

LAND USE CATEGORIES	COMMUNITY NOISE EQUIVALENT LEVEL (Ldn) 60	65	70
MOBILE HOMES	B	C	D
SINGLE-FAMILY, TOWNHOUSE, APARTMENT	B	C	C
HOTELS, MOTELS	A	B	C
SCHOOLS, CHURCHES, LIBRARIES	C	C	C
AUDITORIUMS, CONCERT HALLS	C	C	D
PARKS, PLAYGROUNDS	B	C	C
OFFICES	B	B	B
RETAIL COMMERCIAL, THEATRES, RESTAURANTS	B	B	B
WHOLESALE COMMERCIAL, LIGHT INDUSTRIAL	A	B	B
FARMING/GROVES	A	A	A

INTERPRETATION

ZONE A. CLEARLY ACCEPTABLE — The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference from aircraft noise. (Residential areas: both indoor and outdoor noise environments are pleasant.)

ZONE B. NORMALLY ACCEPTABLE — The noise exposure is great enough to be of some concern, but common building constructions will make the indoor environment acceptable, even for sleeping quarters. (Residential areas: the outdoor environment will be reasonably pleasant for recreation and play.)

ZONE C. NORMALLY UNACCEPTABLE — The noise exposure is significantly more severe, so that unusual and costly building constructions are necessary to ensure adequate performance of activities. (Residential areas: barriers must be erected between the site and prominent noise sources to make the outdoor environment tolerable.)

ZONE D. CLEARLY UNACCEPTABLE — The noise exposure at the site is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive. (Residential areas: the outdoor environment would be intolerable for normal residential use.)

LEGEND

NOISE CONTOUR LINE

AIRPORT PROPERTY BOUNDARY

PINAL/PIMA COUNTY BOUNDARY

ZONING DIVISION LINE

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SCALE IN FEET

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(714) 476-2826

FIGURE 15

DATE: OCTOBER 1, 1991

DRAWN BY: RON JOHANNESSEN

socioeconomic impacts resulting from the proposed development and the improvement of the airport facilities will likely be an asset to their business. Activity by Department of Defense and Army Air National Guard also contribute to socioeconomic impacts to the local area.

AIR QUALITY

Pinal Airpark lies in a fairly open desert area near the Santa Rosa Mountains. The State of Arizona's compilation of air quality data for 1989 indicates that the pollutant of greatest concern in the Marana area is total suspended particulates (TSP), which is a typical concern for warm desert climates. A TSP monitoring site was located at Pinal Airpark for the 1989 monitoring year. The 1989 data indicate a TSP annual geometric mean of 59 $\mu g/m^3$ for Pinal's site. A standard no longer exists for TSP but only for Particulate Matter under 10 microns (PM10). The PM10 annual standard is 50 $\mu g/m^3$; however, PM10 is only a fraction of the concentration of TSP and is averaged arithmetically rather than geometrically.

While aviation activity does contribute to air pollution, the number of operations forecast for the planning period of the proposed project development does not indicate the potential for a significant impact on air quality.

WATER QUALITY

The nearest surface water is the Santa Cruz River, which runs adjacent to the Airpark property on the southwest corner. The river is susceptible to flooding. The last major flooding occurred in 1983.

Normal contaminants from airport operations would be petroleum products. The type and number of operations are concentrated on the northeast end of the field that is the furthest away from the river. Appropriate drainage will be designed and implemented upon project development to mitigate against any potential impact on the river and any other nearby surface water.

SPECIAL LAND USES, DOT SECTION 4(f)

Section 4(f) of the Department of Transportation (DOT) Act specifies that no project will be approved that requires use of any publicly owned land from a public park, recreation area, or wildlife refuge. There are no special land uses, as defined by the Department of Transportation, that exist in the Pinal Airpark vicinity.

HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The Arizona Department of Historic Preservation and the U.S. Army Corp of Engineers have been contacted with regard to historic and archaeological resources in the vicinity of Pinal Airpark. A cultural resources inventory was prepared for the Corps of Engineers in April and May 1991. This survey found remains from Hohokam habitation. This extensive site encompasses much of the Airpark property. Surveys will be required prior to development to further investigate the existence of these resources. Should any further resources be discovered, all necessary steps will be taken in coordination with the Arizona State Archives, Museums, and Historical Department, for the evaluation and preservation of such resources.

BIOTIC COMMUNITIES

Pinal Airpark is surrounded by natural desert habitat. In this area, it is unlikely that native vegetation and wildlife have been disrupted and altered in the past. Construction of an extension to Runway 12-30 to the north will alter the landscape and habitat.

ENDANGERED AND THREATENED SPECIES

The State of Arizona Department of Game & Fish and the U.S. Fish & Wildlife Service have been contacted to determine if any state-listed or federally listed threatened or endangered species are found in the areas of each of the proposed sites. The plant Tumamoc Golbeberry is listed and would be of immediate concern in the Pinal Airpark area. Biological surveys will be required to determine presence of any critical species, and if found, mitigation measures will be taken to insure the preservation of the species.

WETLANDS

There are no wetlands on airport property; thus, no impacts to be mitigated.

FLOODPLAINS

Pinal Airpark is located on a floodplain and is subject to flooding. Construction of paved runways, taxiways, and parking aprons will create approximately 30 acres of impervious surfaces and will create additional water runoff during rains, as discussed under the Water Quality section. The impervious surfaces mentioned above, however, are concentrated at the northeast end of the field that is the furthest away from the most sensitive areas of the field.

SHORELINE MANAGEMENT

The Santa Cruz River is not covered by a shoreline management program; thus, evaluation under this category is not applicable.

COASTAL BARRIERS

This impact refers exclusively to islands on the Atlantic and Gulf coasts; thus, it is not applicable to development at Pinal Airpark.

WILD AND SCENIC RIVERS

The Santa Cruz River is not classified as wild and scenic by the National Park Service; therefore, no impact is expected.

FARMLAND

The Farmland Protection Policy Act (FPPA) directs federal agencies to take into account the adverse effects of federal programs on the preservation of prime or unique farmland. The act protects such farmland from being converted, directly or indirectly, to nonagricultural uses. The proposed developments at Pinal Airpark will not result in farmland conversion directly or indirectly.

ENERGY SUPPLY AND NATURAL RESOURCES

Development and operation of the airport requires consumption of energy resources. As the use grows, so will the consumption of energy. Aviation fuel consumption will increase in relation to increased aircraft operations. At the same time, fuel consumption for surface transportation will decrease as better service is offered through the proposed airport. Increases in fuel use for surface transportation will be evident during construction, when most of the materials will have to be brought in from great distances.

Construction of the proposed airport will result in the use of metal, concrete, and asphalt but the local availability of these materials will not be significantly impacted. The use of electricity will increase slightly due to increased runway lighting needs and facility expansion, but the greater demand is not seen as a significant impact on the available supply.

LIGHT EMISSIONS

As indicated in Chapter Five, Runway 12-30 is currently equipped with Low-Intensity Runway Lighting (LIRL), but the LIRL is scheduled to be replaced with High-Intensity Runway Lighting (HIRL) to accommodate the aircraft currently using the Airpark. Visual Approach Slope Indicators (VASI) will also be installed for Runway 12. The proposed runway extension will require the addition of runway lights. Runway End Identifier Lights (REILs) will be added to the ends of Runway 12-30. These lighting system upgrades will increase light emissions in the area, but the impact is not anticipated to be significant due to the relative intensity of the systems and the distance from any populated area.

SOLID WASTE IMPACTS

The activity generated by completion of the proposed development is not expected to create an increase in solid waste sufficient to cause an adverse impact on disposal facilities.

The FAA and EPA regulations indicate that solid waste sites should not be located within 5,000 feet of an airport utilized by smaller piston-engine aircraft nor within 10,000 feet for turbine-powered aircraft. No landfills exist within these distances of any of the proposed sites, except for the junk storage pile west of the field on Airpark property. The nearest true landfill is the Picacho transfer station.

CONSTRUCTION

Construction activities will impact noise levels during working hours and air quality, due to dust. Design and construction techniques will take into consideration noise and air quality impacts, as well as potential water quality impacts from use of petroleum products such as sealants and pavement. The following controls will be utilized:

- Construction will occur in conformance with FAA **Advisory Circular 150/5370-10A, Standards for Specifying Construction of Airports.**
- Construction will occur in conformance with Pinal County regulations.
- Where a disparity exists between FAA and County requirements, the more restrictive requirement shall apply.
- Sprinkling will be implemented to minimize dust.
- Construction hours will be controlled and sound-suppressing equipment will be utilized.
- Cleared areas shall be replanted as soon as feasible.
- Short-term erosion control shall be provided.